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The First Workshop on the "State of the Art in Nuclear Cluster Physics"

The Workshop on the "State Of The Art in Nuclear Cluster Physics" (SOTANCP2008) took place on May 13–16, 2008 in Strabourg and was hosted by Institut Pluridisciplinaire Hubert Curien (IPHC). The scope of this first workshop brought together different groups, both theoretical and experimental, involved in the study of "Clusters in Nuclei."

A Theoretical Winter School on "Clusters in Nuclei" had previously been organized in Strasbourg in 2005. In recent years, besides the traditional Cluster Conferences series (Cluster '03 held in 2003 in Nara and Cluster '07 held last September in Stratford-upon-Avon, UK as described in *Nuclear Physics News* Vol. 18, No. 1, p. 25), other more informal workshops have been organized with relatively limited numbers of participants in Rostock (2003, 2004, and 2005), in Munich (2006), and in Osaka (also in 2006). The subject treated in these meetings has mainly concentrated on alpha particle condensation in nuclear systems (see *Nuclear Physics News* Vol. 17, No. 4, p. 11).

The purpose of SOTANCP2008 was to promote the exchange of ideas and discuss new developments in "Clustering Phenomena in Nuclear Physics and Nuclear Astrophysics" from both the theoretical and experimental points of views.

The various aspects of the main topics of SOTANCP2008 were divided into seven sections:

1. Alpha Clustering and Nuclear Molecules
2. Alpha Condensates and Analogy with Condensed Matter
3. Clusters in Nuclear Astrophysics
4. Cluster in Superheavy Nuclei
5. Cluster in Radioactivity
6. Clustering in Nuclei far from Stability
7. Two- and Three-body Reaction

The workshop attracted 95 participants from some 20 different countries from all over the world (North and South America, Asia, Australia, and Europe).

Twelve Invited Talks of 40 minutes and 30 minutes duration were presented by distinguished colleagues in their respective area of expertise as part of the 15 plenary sessions. As the organizers wished to present as many as possible of the contributions in oral form, 55 20- and 15-minute talks were also given in the 4 days of the meeting. The structure of the Hoyle state (Y. Funaki) and its role in element genesis (P. Descouvemont), the formation of superheavy elements (V. Zagrebaev) and giant nuclear systems (S. Heinz and C. Golabek) were among the highlights that have been the most actively discussed. Various model approaches to the understanding of alpha-molecular-cluster structure in light (T. Neff) and medium heavy nuclei (Y. Kanada-En'yo), of nuclear molecules (E. Uegaki), and of cluster radioactivity (D. Poenaru) were presented. The study of exotic fission, fusion-fission (M. Itkis), complex fusion processes (R. K. Gupta and E. Bonnet), as well as three-body reactions (D. Baye) has gained a renewed interest with available radioactive ion beam facilities. The formats of the sessions were such that a sufficient amount of time was available for both discussions and questions. The closing remarks were delivered by Professor Walter Greiner in a remarkable Summary Talk.

The Workshop was sponsored from IN2P3 and IPHC (Direction de Recherches Subatomiques), Strasbourg.

The details of the Workshop program (including the slides of the talks) may be found at http://sotancp2008.in2p3.fr/. The Proceedings, in a form of peer-reviewed papers of most of the orally presented talks, will be published in a forthcoming issue of the *International Journal of Modern Physics E*.

Owing to the interest shown by the community and the potential for future research in clustering in nuclei, the members of the International Advisory Committee (most of whom were present at Strasbourg during the first SOTANCP Workshop) have agreed to consider SOTANCP as a new series of meetings to complement the traditional CLUSTER Conferences. We look forward to the new and exciting work that will be presented at the second "SOTANCP Workshop" expected to be held in Brussels in 2010 for the occasion of the retirement of our colleague Professor Daniel Baye.

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